WHAT IS CLAIMED IS:

1. A fluid-energy mill for size reduction of a material, comprising:

a manifold defining a grinding chamber, a gas inlet, a feed inlet, and an outlet, the grinding chamber having a center and a first radius extending from the center;

wherein the feed inlet is positioned such that the material enters the grinding chamber tangent to a second radius extending from the center, the second radius being larger than the first radius.

2. The fluid-energy mill of claim 1 further comprising a cover for enclosing the grinding chamber.

3. The fluid-energy mill of claim 1 wherein the manifold defines a non-circular groove around the grinding chamber.

4. The fluid-energy mill of claim 3 further comprising a seal positioned within the groove.

5. The fluid-energy mill of claim 1 wherein the grinding chamber is cycloid-shaped.

6. The fluid-energy mill of claim 1 wherein the manifold further defines a protective pocket at a region where the material enters the grinding chamber.

7. The fluid-energy mill of claim 6 wherein the manifold further defines a barrier at the region where the material enters the grinding chamber.

8. The fluid-energy mill of claim 1 wherein the feed inlet includes a feed gas inlet and a material funnel.

9. The fluid-energy mill of claim 8 wherein an intersection of the feed gas inlet and the material funnel form an elliptical hole.

10. The fluid-energy mill of claim 8 wherein the feed inlet includes a venturi.

11. The fluid energy mill of claim 1 wherein the feed inlet is oriented at an angle to a horizontal.

12. The fluid energy mill of claim 11 wherein the angle is about 30 degrees or more.

13. The fluid energy mill of claim 1, wherein the gas inlet is positioned such that a gas enters the grinding chamber tangent to a gas inlet radius extending from the center, the gas inlet radius being smaller than the first radius.

14. The fluid energy mill of claim 1, wherein the outlet is positioned such that the material exits the grinding chamber at or near the center.

15. The fluid energy mill of claim 1, wherein the manifold comprises a one-piece manifold.

16. A fluid-energy mill for size reduction of a material, comprising:

a one-piece manifold having a front face and a rear face;

a grinding chamber formed in the front face;

a feed inlet formed in the manifold in communication with the grinding chamber;

a gas inlet formed in the manifold in communication with the grinding chamber;

an outlet formed in the rear face and in communication with the grinding chamber;

a cover removably attachable to the manifold for covering the front face.

17. The fluid-energy mill of claim 16 wherein the manifold defines a non-circular groove around the grinding chamber.

18. The fluid-energy mill of claim 17, further comprising a seal positioned within the groove.

19. The fluid-energy mill of claim 1 wherein the grinding chamber is cycloid-shaped.

20. The fluid-energy mill of claim 16 wherein the manifold further defines a protective pocket at a region where the material enters the grinding chamber.

21. The fluid-energy mill of claim 20 wherein the manifold further defines a barrier at the region where the material enters the grinding chamber.

22. The fluid-energy mill of claim 16 wherein the feed inlet includes a feed gas inlet and a material funnel.

23. The fluid-energy mill of claim 22 wherein an intersection of the feed gas inlet and the material funnel forms an elliptical hole.

24. The fluid-energy mill of claim 22 wherein the feed inlet includes a venturi.

25. The fluid energy mill of claim 16 wherein the feed inlet is oriented at an angle to a horizontal.

26. The fluid energy mill of claim 25 wherein the angle is about 30 degrees or more.

27. The fluid energy mill of claim 16 wherein

the grinding chamber has a center and a first radius extending from the center, and

the feed inlet is positioned such that the material enters the grinding chamber tangent to a second radius extending from the center, the second radius being larger than the first radius.

28. The fluid energy mill of claim 16, wherein

the grinding chamber has a center and a first radius extending from the center, and

the gas inlet is positioned such that a gas enters the grinding chamber tangent to a gas inlet radius extending from the center, the gas inlet radius being smaller than the first radius.

29. The fluid energy mill of claim 16, wherein the outlet is positioned such that the material exits the grinding chamber at or near the center.

30. A fluid-energy mill for size-reduction of a material, comprising:

a manifold defining a grinding chamber, a gas inlet, a feed inlet, and an outlet;

wherein the feed inlet is oriented at an angle to horizontal.

31. The fluid energy mill of claim 30 wherein the angle is about 30 degrees or more.

32. The fluid-energy mill of claim 30, further comprising a cover for enclosing the grinding chamber.

33. The fluid-energy mill of claim 30 wherein the manifold defines a non-circular groove around the grinding chamber.

34. The fluid-energy mill of claim 30 further comprising a seal positioned within the groove.

35. The fluid-energy mill of claim 30 wherein the grinding chamber is cycloid-shaped.

36. The fluid-energy mill of claim 30 wherein the manifold further defines a protective pocket at a region where the material enters the grinding chamber.

37. The fluid-energy mill of claim 36 wherein the manifold further defines a barrier at the region where the material enters the grinding chamber.

38. The fluid-energy mill of claim 30 wherein the feed inlet includes a feed gas inlet and a material funnel.

39. The fluid-energy mill of claim 38 wherein an intersection of the feed gas inlet and the material funnel forms an elliptical hole.

40. The fluid-energy mill of claim 39 wherein the feed inlet includes a venturi.

41. The fluid energy mill of claim 39, wherein the manifold comprises a one-piece manifold.

42. A method for size-reduction of a material, comprising:

delivering a material to a feed inlet of a manifold defining a grinding chamber, a gas inlet, the feed inlet, and an outlet, the grinding chamber having a center and a first radius extending from the center;

wherein the material enters the grinding chamber tangent to a second radius extending from the center, the second radius being larger than the first radius.

43. The method of claim 42, further comprising supplying gas to the feed inlet to propel the material into the grinding chamber.

44. The method of claim 42, further comprising supplying gas to the gas inlet to create a vortex within the grinding chamber.

45. The method of claim 44, further comprising receiving the material at the outlet.

46. The method of claim 42, wherein the feed inlet is oriented at an angle to a horizontal.

47. The method of claim 46, wherein the angle is about 30 degrees or more.

48. The method of claim 42, wherein the manifold comprises a one-piece manifold.